

## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <a href="http://about.jstor.org/participate-jstor/individuals/early-journal-content">http://about.jstor.org/participate-jstor/individuals/early-journal-content</a>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

	OFFICERS	OF THE	Society.	
BEVERLY L. HODGHEAD				
R. G. AITKEN				
Mrs. Isaac Roberts				
J. Costa				
D. S. RICHARDSON				Secretary and Treasurer

Board of Directors—C. S. Cushing, B. L. Hodghead, A. H. Markwart, D. S. Richardson, J. Costa, Mrs. Isaac Roberts, Bernard Benfield, R. G. Aitken, J. C. Cebrian, J. D. Galloway, W. W. Campbell.

Publication Committee—R. G. Aitken, H. Shapley, J. H. Moore.
Finance Committee—C. S. Cushing, W. H. Crocker, A. H. Markwart.
Library Committee—D. S. Richardson, F. V. Cornish, Mrs. Isaac Roberts.
Donohoe Comet-Medal Committee—W. W. Campbell, Joseph H. Moore, Sturla Einarsson.

Article VIII of the By-Laws of the Society, as amended in 1903, reads as follows: "Each active member shall pay, as annual dues, the sum of five dollars, due on the first day of January each year in advance. When a new member is elected during the first quarter of any year, he shall pay full dues for such year; when elected during the second quarter, he shall pay three fourths only of such dues; when elected during the third quarter, he shall pay one half only of such dues; when elected during the last quarter, he shall pay one fourth only of such dues; provided, however, that one half only of the dues in this article provided for shall be collected from any member who is actually enrolled as a student at a university, seminary, high school, or other similar institution of learning, during such time as he is so enrolled . . . Any member may be released from annual dues by the payment of fifty dollars at any one time, and placed on the roll of life members by the vote of the Board of Directors . . ."

Volumes for past years will be supplied to members, so far as the stock on hand is sufficient, on the payment of two dollars per volume to either of the Secretaries. Single copies will be supplied on the following basis: one dollar to non-members, seventy-five cents to dealers, and fifty cents to members.

The library of the Society is now located in the Sutro Branch of the California State Library, at the corner of Sacramento and Webster Streets, San Francisco, where the books may be consulted or taken out by Members, subject to the regulations of the State Library.

The order in which papers are printed in the *Publications* is decided simply by convenience. In general, those papers are printed first which are earliest accepted for publication. Papers intended to be printed in a given number of the *Publications* should be in the hands of the Committee not later than the 20th of the month preceding the month of publication. The responsibility for the views expressed in the papers printed, and for the form of their expression, rests with the writers, and is not assumed by the Society. Articles for the *Publications* should be sent to the chairman of the Committee on Publication. R. G. Aitken, Lick Observatory, Mt. Hamilton, California.

Reprints of articles appearing in the Publications will be furnished at the following prices:

	4 pp.	ð pp.	12 pp.	ro pp.
50 copies, without covers		\$4.00	\$5.50	\$7.00
50 copies, with covers	4.00	6.00	7.50	9.00

Regular meetings of the Society are held in San Francisco or vicinity on the last Saturdays of January, March, June, and November, and at the Lick Observatory on the last Saturday of August. Members who propose to attend a meeting at Mount Hamilton should communicate with the Secretary-Treasurer, in order that arrangements may be made for transportation.

## PUBLICATIONS ISSUED BI-MONTHLY. (February, April, June, August, October, December.)

Published by the Astronomical Society of the Pacific at 128 Lick Building, 35 Montgomery Street, San Francisco, California. Subscription price, \$5.00 per year.



Address of the Secretary-Treasurer:

Mr. D. S. Richardson,

128 Lick Bldg., 35 Montgomery St.,

San Francisco, California.



## CONTENTS

P	AGE
CAMPBELL, W. W., The International Research Council and the International Astronomical Union	249
HALE, GEORGE E., Preliminary Results of a Comparative Test of the 60-inch and 100-inch Telescopes of the Mount Wilson Observatory	257
SHAPLEY, HAROLD, On the Existence of External Galaxies	261
MOORE, J. H., and SHANE, C. D., The Green Nebular Bands in Nova Aquilae No. 3	269
McNeill, Malcolm, Planetary Phenomena for November and December, 1919	273
DOOLITTLE, ERIC, Note on the Double Star, Hussey 321, = Burnham's General Catalogue No. 8629	
Notes from the Pacific Coast Observatories:	
The Ring Nebula B. D. + 30° 3639, by Francis G. Pease	276
Two Sun-spots Close to the Sun's Equator, by Seth B. Nicholson	277
Note on a Sensitive Spectrographic Arrangement, by HAROLD SHAPLEY	278
Metcalf's First Comet, by Seth B. Nicholson and Milton Humason	280
Novae in the Andromeda Nebula, by HAROLD SHAPLEY and J. C. DUNCAN	280
The Comets of 1919, by H. M. Jeffers	281
Measures of the Disk Surrounding Nova Aquilae No. 3, by Robert G. Aitken	283
Three New Planetary Nebulae, by HEBER D. CURTIS	
The Orbit of the Visual Binary System IIII, by ROBERT G. AITKEN	285
Officers of the Society	201